

1 Nevertheless many useful stage effects can be created
2 through exploitation of the infinite sharpness of my invention
3 and the consequent sharp-appearing images on successive
4 scrims. Projection of sharply defined abstract art or geomet-
5 ric figures, for example, that materialize on the several
6 scrims in series but with progressively increasing size, may
7 be well adapted to presentations with scientific or futuristic
8 themes.

9 In addition, carefully designed images projected at suit-
10 able angles onto successive scrims — and with the audience
11 positioned in a somewhat restricted angular range — can ap-
12 pear to hover between two scrims in an interesting kind of
13 three-dimensional effect. This phenomenon may be related to
14 Nader-Esfahani's discussion in U. S. Patent 5,556,184.

15 (v) axially spaced natural objects: foliage —
16 Still another class of projection media are living things.
17 Particularly interesting image effects may be obtained by pro-
18 jection on trees 547 (Fig. 34), vines, bushes, and other
19 plants. As shown in the drawing, an image set may be prepared
20 for projection that contains components at roughly left, right
21 and center that are aligned for projection onto respective
22 trees 547d, 547e, 547f.

23 The show may be viewed from near the position of the pro-
24 jector 501, or if preferred from an audience position somewhat

1 off to one side as actually demonstrated by the illustration.
2 Once again different moving images may appear sharply on each
3 of the trees — made, for instance, from dramatic film clips
4 of faces (e. g. statesmen, actors, singers, storytellers), or
5 perhaps of cartoon characters, animals, fish, birds etc.

6 (vi) axially spaced natural objects: living crea-
7 tures — In many of the foregoing exemplary embodiments of my
8 invention I have suggested projecting images of living people
9 onto inanimate objects. Another creative form of my invention
10 encompasses instead projecting images onto living people 647
11 (Fig. 35).

12 For instance images 646 of inanimate (or animate) objects
13 — such as flags, swords, cannons, or even scenery — might be
14 projected onto groups of people. This can be done in such a
15 way as to simultaneously illuminate the people and superimpose
16 upon them images of emblems or icons related to their dramatic
17 roles.

18 One such scheme appears in the illustration. Actually in
19 an outdoor scene, a group of actors 647d costumed as native
20 Americans is standing on a hill, relatively near to the pro-
21 jector 601. In a more-distant grouping and considerably lower
22 are other actors costumed as frontiersmen and mounted on
23 horses.

1 A sharply defined image of a peacepipe (not shown), with
2 smoke curling above it and a fluttering feather below, is pro-
3 jected on the upper group. An image of a ranch house (not
4 shown), or perhaps a small child (not shown) playing with an
5 old-fashioned wooden toy, is projected — from a different
6 part of the same projector, but simultaneously — onto the
7 lower group.

8
9
10 i) Exemplary dimensions — Following are representative
11 approximate dimensions used in my prototype projector.

12
13 milli-

14 meter inch item

15
16 in the red channel:

17 240 9.45 distance A (Fig. 2) from the laser 10r to
18 the galvanometer 21r axis

19 50 1.97 distance B from the negative lens 18r to
20 the galvanometer 21r axis

21 4 0.16 distance C from the cylindrical lens 19r to
22 the galvanometer 21r axis

interchannel:

240	9.45	offset D between the red and blue channel mirror centerlines
120	4.72	offset E between the red and green channel mirror centerlines
120	4.72	offset F between the blue and green channel mirror centerlines
100	3.94	distance L from the blue-green laser to the dichroic color separator 12gb

in the green channel:

4	0.16	distance G from the cylindrical lens 19g to the galvanometer 21g axis
50	1.97	distance H from the negative lens 18g to the galvanometer 21g axis
70	2.76	distance J from the folding mirror 16g cen- terline to the galvanometer 21g axis
80	3.15	offset distance I along the crosspath 15g, between the dogleg paths 17g, 13g
100	3.94	distance M from the dichroic color separa- tor 12gb to the folding mirror 14g

in the blue channel:

240	9.45	distance N from the blue-green laser 10bg to the galvanometer 21b axis
60	2.36	distance O from the blue-green laser 10bg to the folding mirror 14b
50	1.97	distance P from the negative lens 18b to the galvanometer 21b axis
4	0.16	distance Q from the cylindrical lens 19b to the galvanometer 21b axis

in the modulator tier:

110	4.33	distance R (Fig. 3) between the forward planes 30r, 30g of the red and green modulators
330	12.99	distance S between the forward plane 30g of the green modulator and the rear apex of the projection lens 44
220	8.66	distance T between the forward plane 30r of the red modulator and the rear apex of the projection lens 44
100	3.94	diameter U of the projection lens 44
120	4.72	offsets V between the centerline of the green modulator 30g and the centerlines of the red and blue modulators 30r, 30b

1	240	9.45	offset W between the centerlines of the red
2			and blue modulators 30r, 30b
3	50	1.97	length X (Fig. 4) of each cube 25r, 25g,
4			25b
5	103	4.06	height Y of the projection lens (output
6			objective) 44
7	70	2.76	width Z of the red-channel folding mirror
8			37r
9	50	1.97	height AA of each beam-splitter/analyzer
10			cube 25r, 25g, 25b
11	320	12.60	vertical distance BB from the horizontal
12			midplane of the upper tier to the top
13			surfaces of the cubes 25
14	20	0.79	height CC of each cylindrical lens 19
15	10-20	0.39	
16		to 0.79	widths DD of cylindrical lenses 19
17	30-50	1.18	
18		to 1.97	focal lengths of cylindrical lenses 19
19	44	1.73	overall width EE (Fig. 4a) of each modula-
20			tor 30
21	34	1.34	overall height FF of each modulator 30
22	70	2.76	diameter of each recollimator lens 23
23	310	12.20	focal length of each recollimator lens 23
24	60	2.36	diameter of each modulator output lens 36

1 250 9.84 focal length of same

2
3 25 0.98 diameter $2r$ (Figs. 25a, 29) of the laser
4 aperture

5 ~22 0.87 diameter $2m$ across the beam as defined by
6 the limb L (Fig. 25a).

7
8 Although these values have been found to lead to excellent
9 results, I continue to experiment with component substitutions
10 in the interest of still further enhancement.

11
12
13
14 It will be understood that the foregoing disclosure is
15 intended to be merely exemplary, and not to limit the scope of
16 the invention — which is to be determined by reference to the
17 appended claims.